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2008 MICHIGAN BLACK BEAR HUNTER SURVEY

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ABSTRACT

A random sample of bear hunters was contacted after the 2008 hunting season to determine hunter participation, hunting methods, bear harvest, and hunter satisfaction. In 2008, an estimated 9,500 hunters spent nearly 65,500 days afield and harvested about 2,476 bears; an increase of nearly 11% from 2007. Statewide, 26% of hunters harvested a bear. Baiting was the most common hunting method used to harvest bears, although hunters using dogs had greater hunting success than hunters using bait only. Statewide, about 53% of hunters rated their hunting experience as very good or good. Most hunters (65%) approved of the preference-point system for the distribution of hunting licenses.

INTRODUCTION

Beginning in 1990, the Michigan Department of Natural Resources (DNR) created black bear (*Ursus americanus*) management units and limited the number of bear hunting licenses issued for each unit. Before 1990, an unlimited number of bear licenses were sold, and licenses were valid in all areas open to bear hunting. In 2000, the DNR modified the licensing system by implementing a zone and quota system based on preference points for issuing bear hunting licenses. Under this system, hunters received one preference point if they applied for a hunt but were not selected in the drawing. Hunters also could obtain a preference point by completing an application but forgoing the drawing. Applicants with the greatest number of preference points had the greatest chance of being selected for a hunt, except that no more than 2% of the licenses were issued to nonresidents.



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In 2008, ten bear management units in Michigan, totaling about 35,360 square miles, were open for bear hunting (Figure 1). Bear could be hunted September 10-October 26 in all of the Upper Peninsula (UP) units, except the Drummond Island Management Unit (September 10-October 21) and in the northern Lower Peninsula (LP) units (September 19-25). The Red Oak Management Unit in the LP also had an archery-only hunt during October 5-11. The DNR set license quotas for each management unit and allocated 12,993 licenses among 38,592 eligible applicants using the preference-point distribution system. Licenses were valid on all land ownership types and allowed a hunter to take one bear of either sex, excluding cubs and female bears with cubs. Bear could be harvested with either a firearm or archery equipment, except for the special archery-only hunt in the Red Oak Management Unit. Hunters could use bait or dogs to hunt bears (except dogs could not be used during September 10-14 in the UP, excluding the Drummond Island Management Unit, and during the archery-only season in the Red Oak Management Unit).

The DNR and Natural Resources Commission have the authority and responsibility to protect and manage the wildlife resources of the state of Michigan. Harvest surveys are one of the management tools used by the DNR to accomplish its statutory responsibility. Estimating harvest, hunting effort, and hunter satisfaction are among the primary objectives of these surveys. Estimates derived from harvest surveys, as well as harvest reported by hunters at mandatory registration stations, and other indices, are used to monitor bear populations and establish harvest regulations.

METHODS

The DNR provided all bear hunters the option to report information about their bear hunting activity voluntarily via the Internet. This option was advertised on the DNR website and an email message was sent to all license buyers that had provided an email address to the DNR (2,477 licensees). Hunters reported whether they hunted, number of days spent afield, whether they harvested a bear, date of harvest, and their hunting methods. Hunters also reported whether other hunters (including bear hunters) caused interference during their hunt. In addition, hunters rated the status of the bear population compared to last year (i.e., more, same, fewer bear, or unknown). Successful hunters were asked to report harvest date, sex of the bear taken, and harvest method. All hunters were asked to rate their overall hunting experience and indicate whether they approved of the preference-point system used to distribute hunting licenses. Finally, all hunters were asked what factors were important for selecting their hunting location. Following the 2008 bear hunting season, a questionnaire (Appendix A) was mailed to 3,796 randomly selected people (Table 1) that had purchased a bear hunting license (resident, senior, nonresident bear licenses, and comprehensive lifetime license) and had not already voluntarily reported harvest information via the Internet. Hunters receiving the questionnaire in the mail were asked the same questions as hunters responding on the internet.

Estimates were calculated using a stratified random sampling design that included eleven strata (Cochran 1977). Hunters were stratified based on the management unit where their license was valid (10 management units). Hunters that had voluntarily reported information about their hunting activity via the Internet were treated as a separate stratum

(eleventh stratum). The statewide estimate of the mean number of days required to harvest a bear was calculated using a different ratio for each stratum (i.e., separate ratio estimator). The number of bears registered in each stratum was used as an auxiliary variate to improve the precision of ratio estimates.

A 95% confidence limit (CL) was calculated for each estimate. In theory, the CL can be added and subtracted from the estimate to calculate the 95% confidence interval. The confidence interval is a measure of the precision associated with the estimate and implies that the true value would be within this interval 95 times out of 100. Unfortunately, there are several other possible sources of error in surveys that are probably more serious than theoretical calculations of sampling error. They include failure of participants to provide answers (nonresponse bias), question wording, and question order. It is very difficult to measure these biases; thus, estimates were not adjusted for these possible biases.

Statistical tests are used routinely to determine the likelihood that the differences among estimates are larger than expected by chance alone. The overlap of 95% confidence intervals was used to determine whether estimates differed. Non-overlapping 95% confidence intervals was equivalent to stating that the difference between the means was larger than would be expected 995 out of 1,000 times, if the study had been repeated (Payton et al. 2003).

Questionnaires were mailed initially during late November 2008, and up to two follow-up questionnaires were mailed to nonrespondents. Although 3,796 people were sent the questionnaire, 40 surveys were undeliverable, resulting in an adjusted sample size of 3,756. Questionnaires were returned by 2,980 people, yielding a 79% adjusted response rate. In addition, 731 people voluntarily reported information about their hunting activity via the Internet before the random sample was selected.

RESULTS

In 2008, 10,178 bear hunting licenses were purchased (Table 1), a 7% increase from 2007 (9,514). License sales in 2008 were the largest recorded since the current management system began in 1990. Most of the people buying a license in 2008 were men (91%), and the average age of the license buyers was 47 years (Figure 2). About 3% of the license buyers (344) were younger than 17 years old.

Nearly $93 \pm 1\%$ of the license buyers hunted bear (Table 2). These hunters spent 65,516 days afield ($\bar{x} = 6.9$ days/hunter) and harvested 2,476 bears. Harvest increased by nearly 11% from 2007 (Figure 3). Marquette County was the county with the highest number of bear hunters and bears harvested during 2008 (Table 3).

The average number of days required to harvest a bear statewide was 26.4 days in 2008 (Table 2, Figure 4). Mean effort per harvested bear increased in the western UP, but declined in the eastern UP and in the LP between 2007 and 2008 (Figure 5). Long-term trends are difficult to interpret because hunting seasons have been lengthened and hunt periods and areas have been added since 1992; thus, these annual estimates are not directly comparable. In 1994, most early hunt periods were increased from 37 to 42 days and a third hunt period was added in the Gwinn Management Unit. In 1995, a third hunt period was added in the

Baraga Management Unit. In 1996, Baldwin and Gladwin management units were created, and a third period was added to Bergland, Amasa, Carney, and Newberry management units. In 2002, the units in the LP were expanded slightly to coincide with county boundaries. In 2006, the area of the Bladwin Unit was increased slightly with the addition of Leelanau County. The units having the highest and lowest effort per harvested bear have generally been Gladwin and Drummond Island management units, respectively (Figure 6).

About 36% of the bear hunters hunted on private lands only, 44% hunted on public lands only, and 19% hunted on both private and public lands (Table 4). Bear hunters spent 23,590 days afield on private land, 26,419 days hunting on public land only, and 15,057 days hunting on both private and public lands (Table 5). Of the estimated 2,476 bear harvested in 2008, $38 \pm 3\%$ of these bears (936 ± 81) were taken on private land. About $62 \pm 3\%$ of the bears ($1,526 \pm 105$) were taken on public land. A few bear (14 ± 12) were harvested from land of unreported ownership.

For bears that the harvest date was reported, about 22% of these bears were taken during the first five days and 48% during the first ten days of the hunting season (Figure 7). Of the bears harvested, $59 \pm 3\%$ were males ($1,455 \pm 102$) and $40 \pm 3\%$ were females (990 ± 86 ; Table 6). Statewide, 26% of hunters harvested a bear in 2008 (Table 2). Hunter success ranged from 15-49% among the bear management units (Table 2).

Most hunters ($76 \pm 1\%$) used only firearms while hunting bear, although $24 \pm 1\%$ of the hunters used archery equipment only or a combination of firearm and archery equipment (Table 7). Most hunters ($85 \pm 2\%$) used a firearm to harvest their bear, while $13 \pm 2\%$ used a bow. A small proportion of successful hunters ($<1\%$) failed to report whether their bear was taken with a gun or bow. Most hunters ($85 \pm 1\%$) relied primarily on baiting as a means of locating and attracting bears (Table 8). About 10% ($\pm 1\%$) of hunters relied primarily on dogs alone or a combination of baiting and dogs to locate bears. About 3% of hunters relied on a hunting method not involving dogs or bait.

About $83 \pm 2\%$ of the harvested bears were taken with the aid of bait only (Table 9). Hunting success for hunters using bait only was $26 \pm 1\%$, while hunting success for hunters using dogs was $34 \pm 4\%$ in 2008. Success among hunters using dogs has usually been higher than among hunters using bait only (Figure 8).

Statewide, about $53 \pm 1\%$ of hunters rated their hunting experiences as very good or good and $23 \pm 1\%$ rated their hunting experiences as poor or very poor (Tables 3 and 10). Hunter satisfaction is affected by many factors such as hunting success and whether hunting activities were completed without interference (Figure 8 and 9). In 2008, $23\% \pm 1\%$ of the hunters ($2,162 \pm 120$) were interfered with by other hunters. Most of this interference was caused by another bear hunter; $17\% \pm 1\%$ of the hunters ($1,639 \pm 109$) reported that other bear hunters interfered with their hunt. Generally, hunters in the UP were less likely to be interfered with by other hunters than hunters in the LP (Tables 3 and 10, Figure 10).

In 2000, a preference-point system was implemented for distributing bear hunting licenses. Hunters were asked whether they approved of this distribution system. Most hunters ($65 \pm 1\%$) approved or strongly approved of the system. About $18 \pm 1\%$ of the hunters

indicated that they were not sure about the system, and $16 \pm 1\%$ disapproved or strongly disapproved of the system.

Bear hunters were asked which reasons were important for selecting their hunting location (Figure 11). Hunters most frequently cited high bear density as the most important factor used to select their hunting area ($67 \pm 1\%$). Hunting an area where they experienced low hunting pressure ($59 \pm 1\%$), hunting in a traditional hunting area ($55 \pm 1\%$), and hunting where there were large amounts of public lands ($53 \pm 1\%$) were the next most important reasons to select an area.

ACKNOWLEDGEMENTS

I thank all the bear hunters that provided information. Autumn Feldpausch, Theresa Riebow, and Becky Walker completed data entry. Supriya Reddy and Chris Larson developed the Internet harvest reporting application. The figure of bear management units and the area open to hunting was prepared by Marshall Strong. Mike Bailey, Pat Lederle, Russ Mason, Cheryl Nelson, and Doug Reeves reviewed a previous version of this report.

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- Payton, M. E., M. H. Greenstone, and N. Schenker. 2003. Overlapping confidence intervals or standard error intervals: what do they mean in terms of statistical significance? *Journal of Insect Science* 3:34.



Figure 1. Bear management units open to hunting in Michigan, 2008.

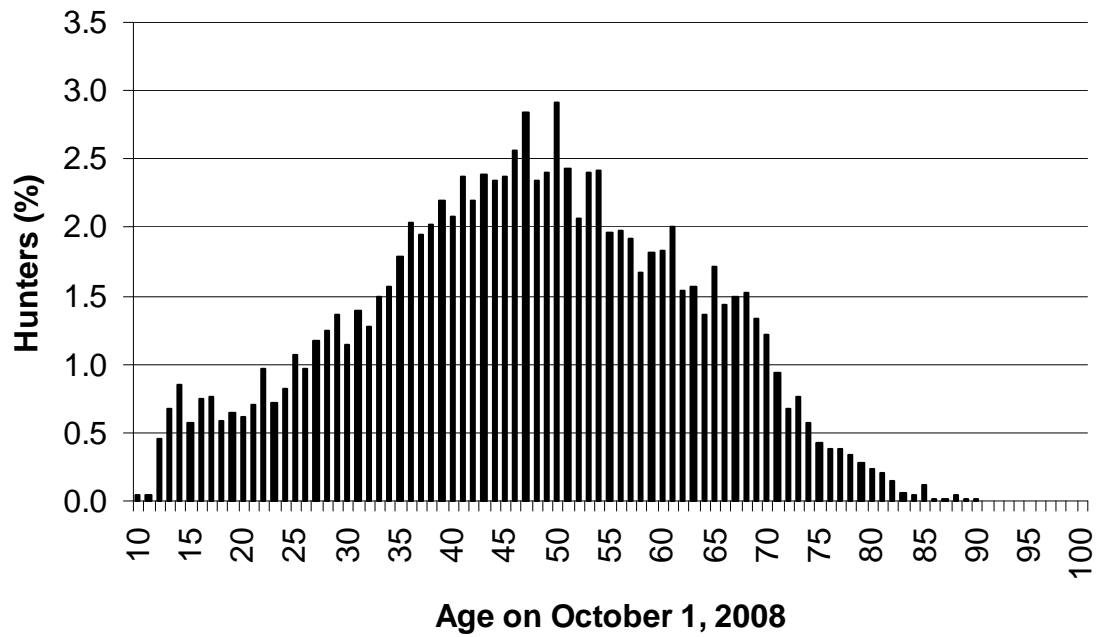


Figure 2. Age of people that purchased a bear hunting license in Michigan for the 2008 hunting season (\bar{x} = 47 years). Licenses were purchased by 10,178 people.

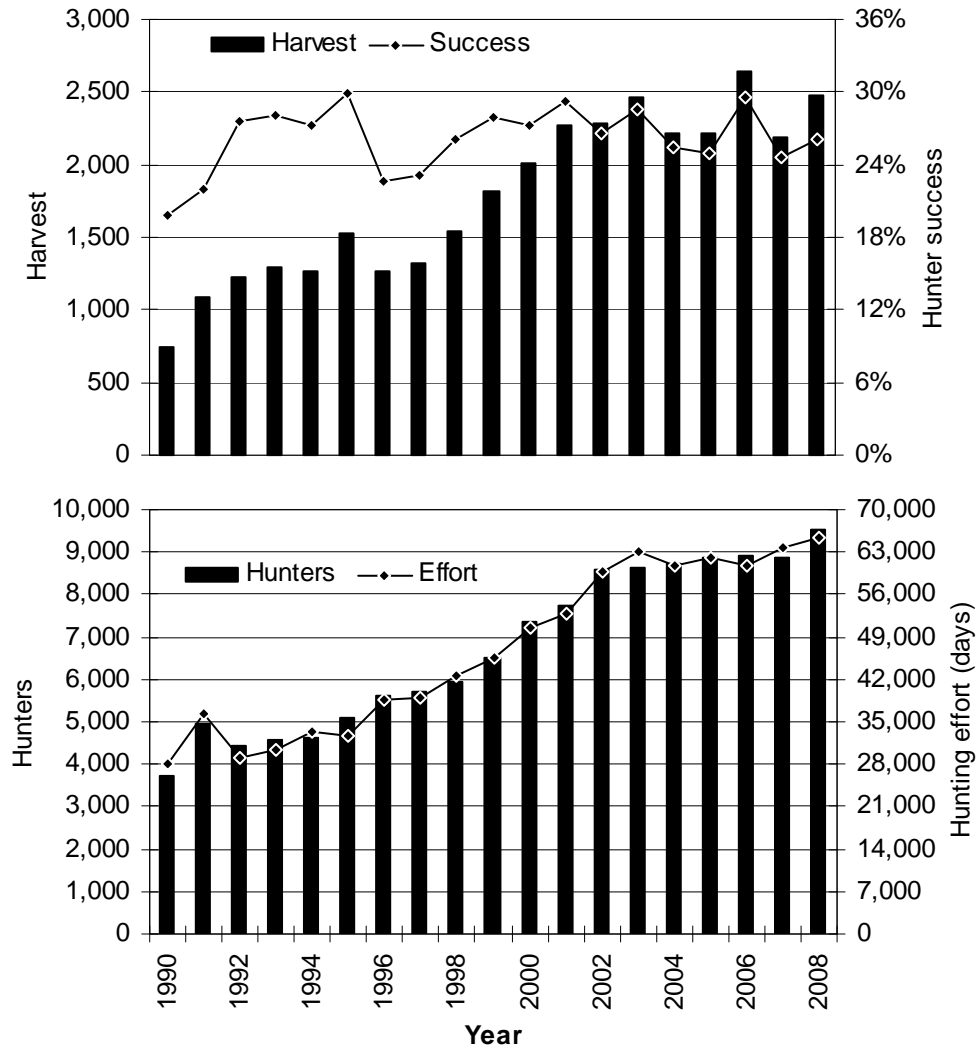


Figure 3. Estimated harvest, hunting success, number of hunters, and hunting effort during bear hunting seasons, 1990-2008.

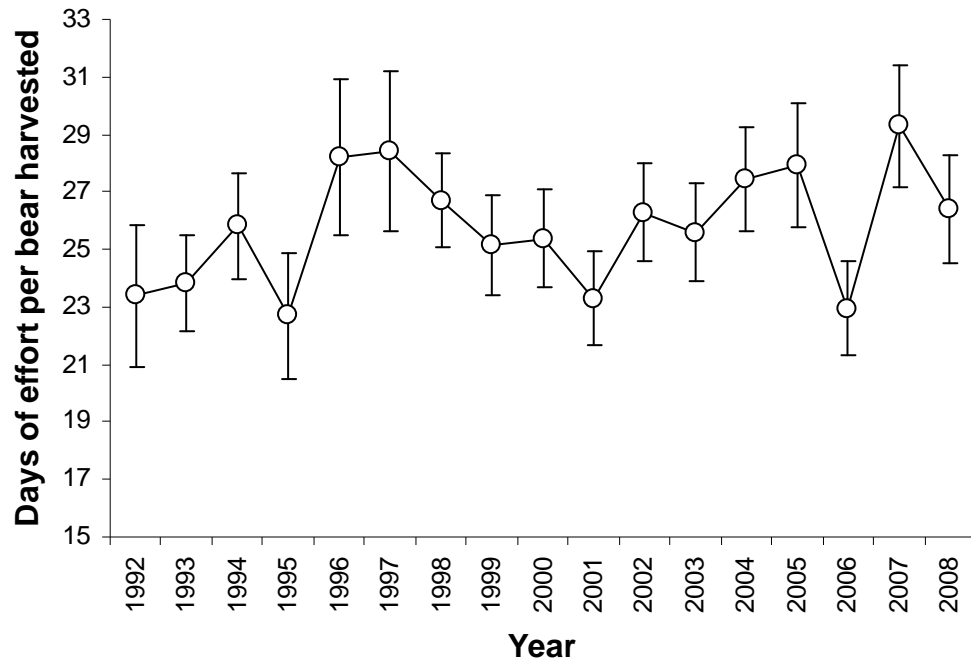


Figure 4. Estimated mean number of days required to harvest a bear statewide in Michigan during 1992-2008. Vertical bars represent the 95% confidence interval.

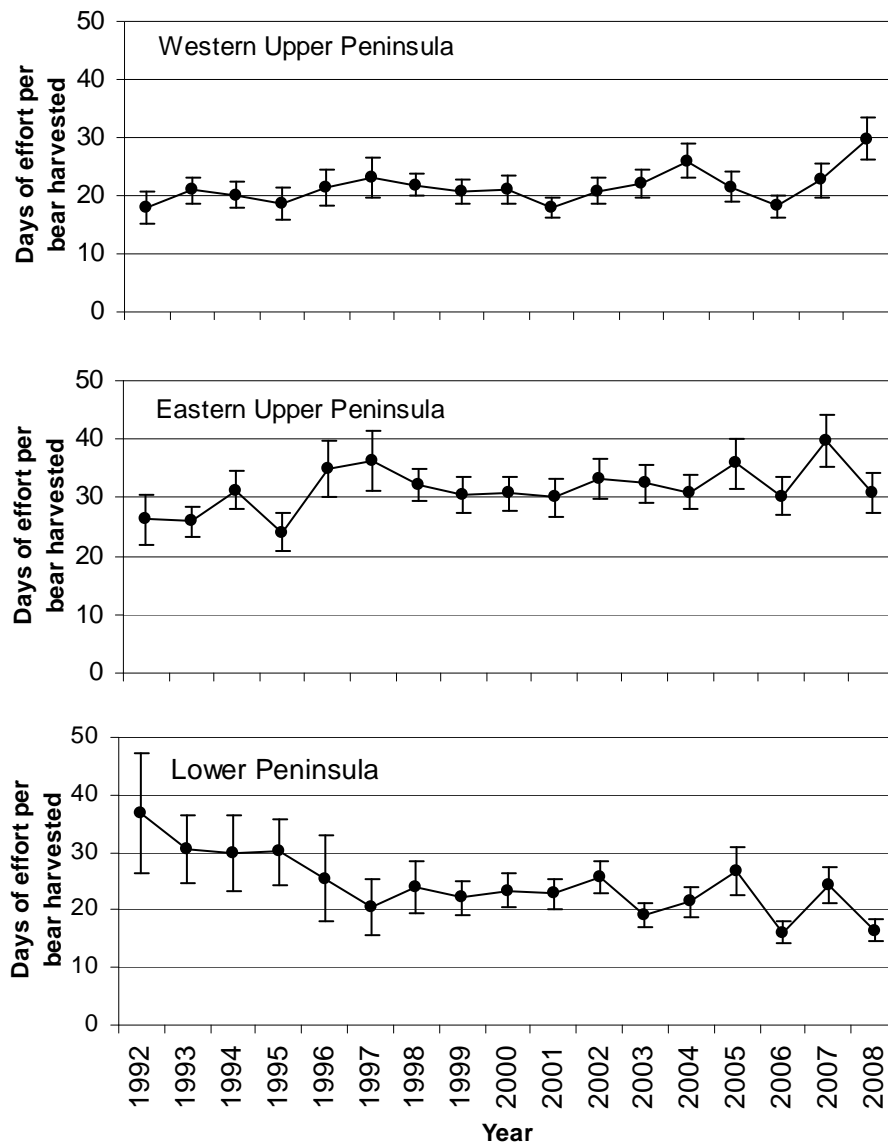


Figure 5. Estimated mean number of days required to harvest a bear in Michigan during 1992-2008, summarized by ecological region. Western UP consisted of Amasa, Baraga, and Bergland units, and eastern UP consisted of Carney, Gwinn, and Newberry units (Drummond Island Management Unit excluded). Lower Peninsula consisted of Baldwin, Gladwin, and Red Oak management units. Vertical bars represent the 95% confidence interval.

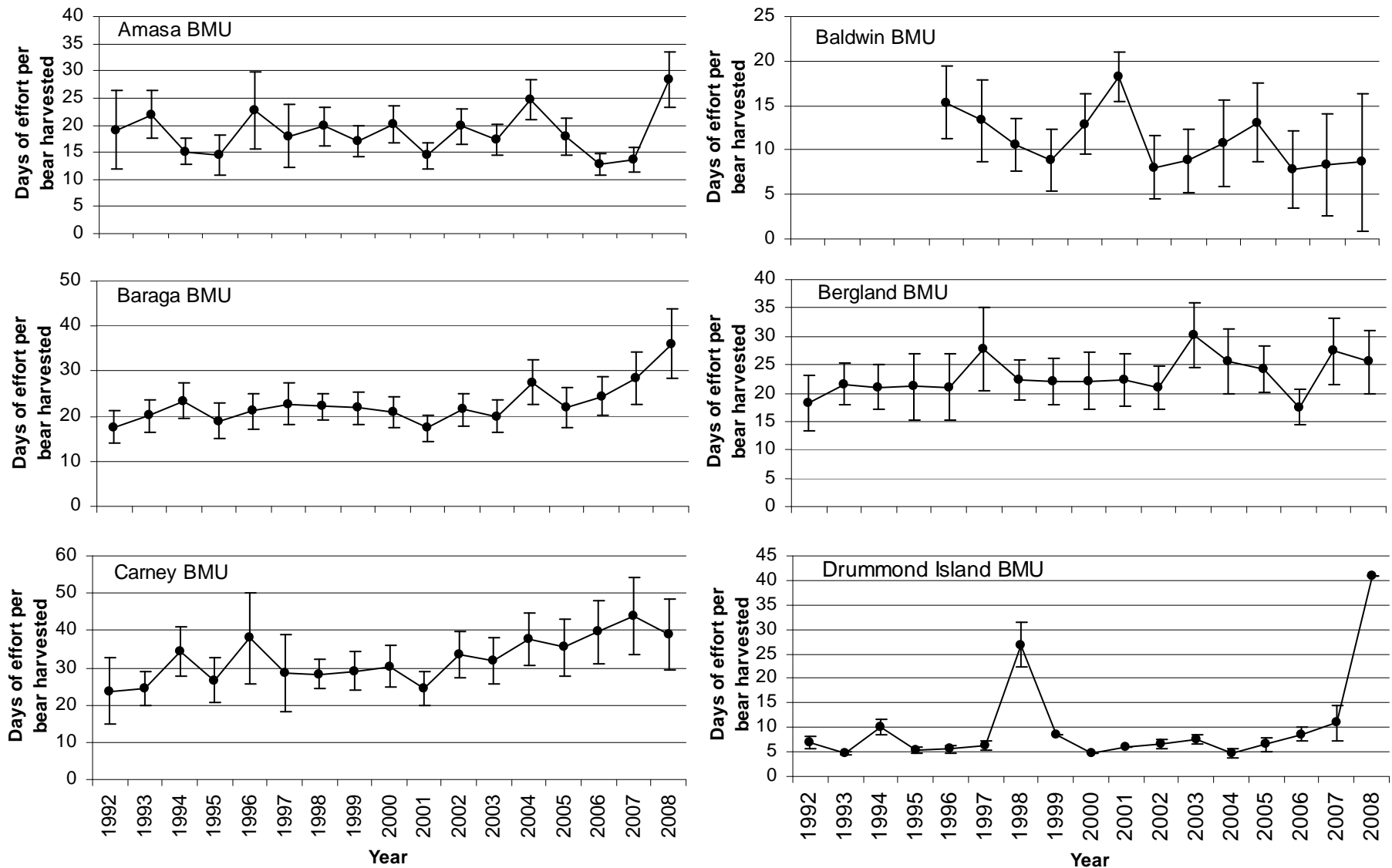


Figure 6. Estimated mean number of days required to harvest a bear in Michigan during 1992-2008, summarized by management unit. Baldwin and Gladwin management units were created in 1996. Vertical bars represent the 95% confidence interval.

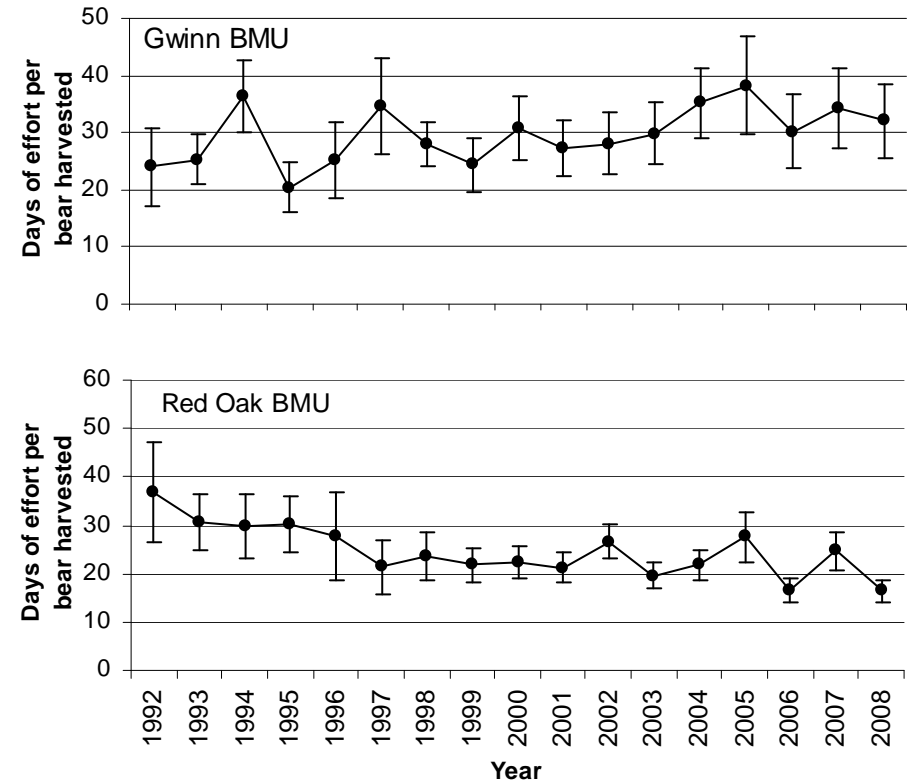
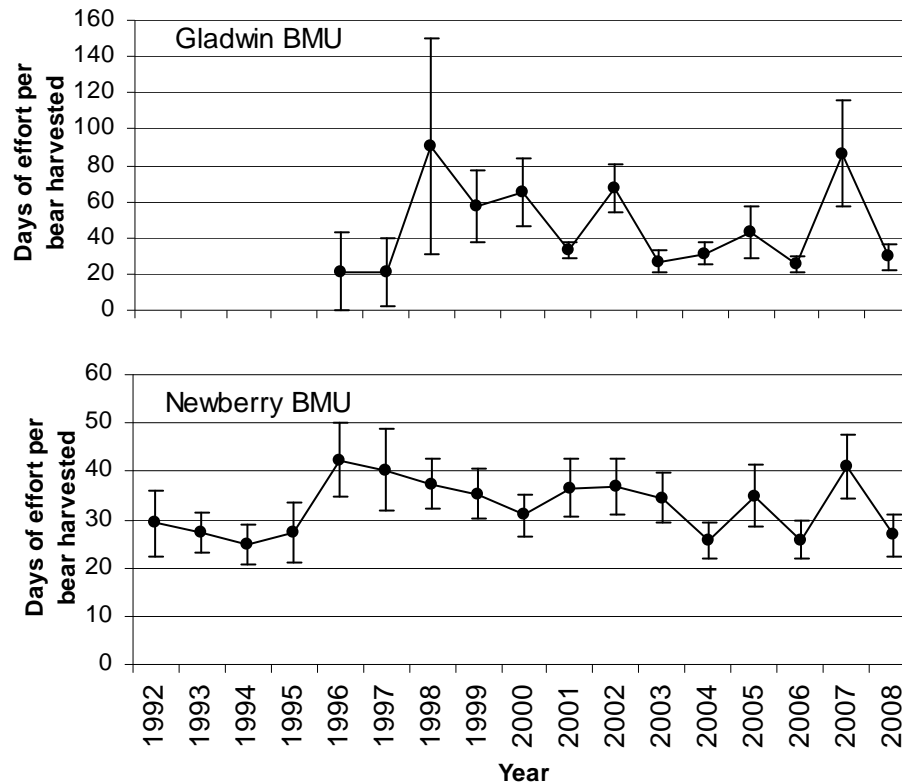


Figure 6 (continued). Estimated mean number of days required to harvest a bear in Michigan during 1992-2008, summarized by management unit. Baldwin and Gladwin management units were created in 1996. Vertical bars represent the 95% confidence interval.

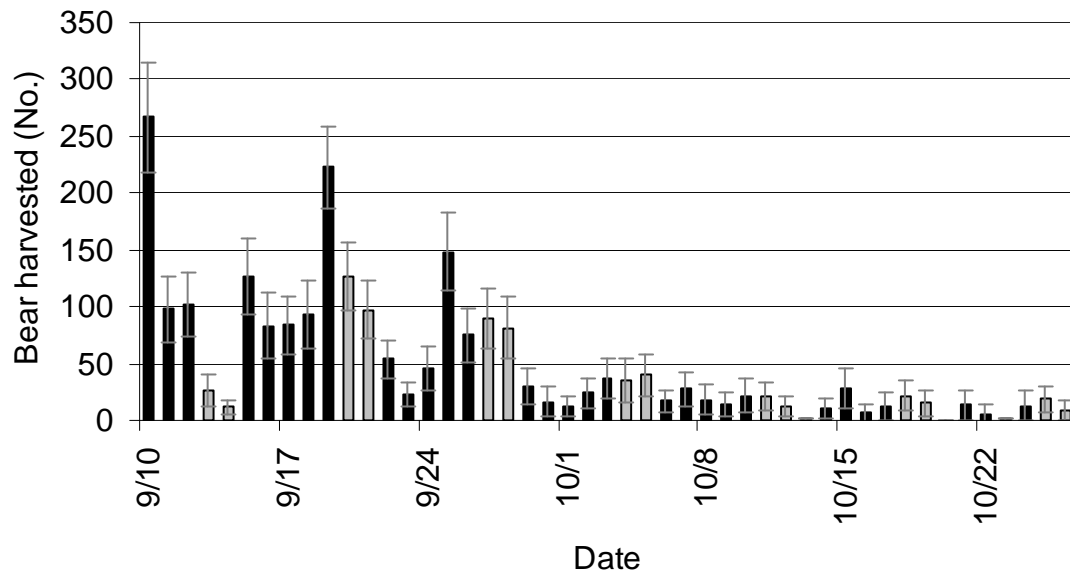


Figure 7. Estimated number of bear harvested by date during the 2008 bear hunting season (includes all hunt periods). An additional 138 ± 35 bear were taken on unknown dates. Gray-shaded bars indicate weekends. Vertical bars represent the 95% confidence interval. The opening of the bear hunting season was September 10 in the UP and September 19 in the LP. Hunting with dogs in the UP started on September 15.

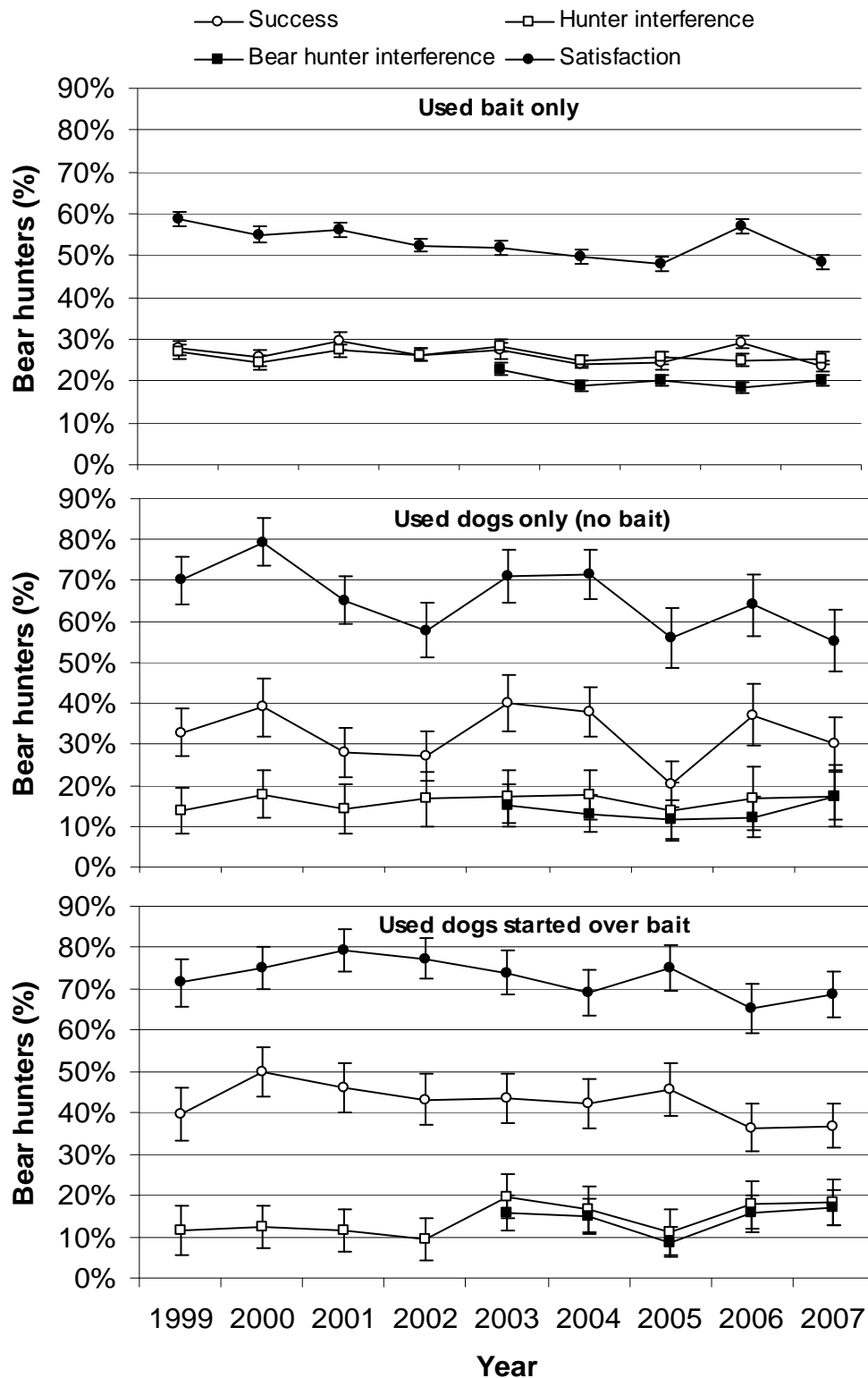


Figure 8. Estimated hunter success, interference, and satisfaction of bear hunters with their hunting experience in Michigan during 1999-2008, summarized by primary method of hunt. Vertical bars represent the 95% confidence interval. Interference was the proportion of hunters indicating they experienced interference from other hunters. Satisfaction was the proportion of hunters rating their hunting experience as very good or good.

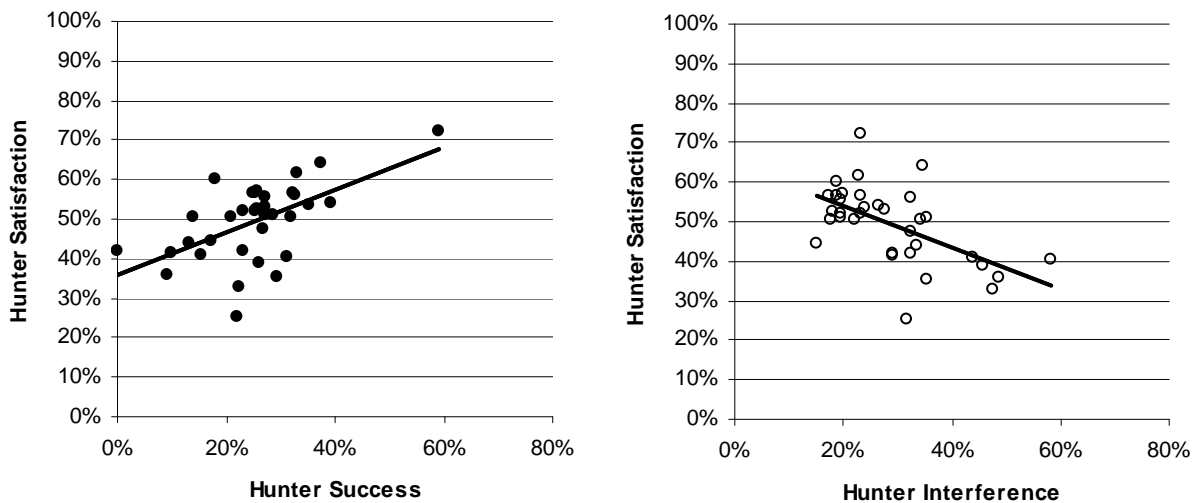


Figure 9. Hunter satisfaction (hunters rating their hunting experience as very good or good) relative to hunter success and hunter interference for 34 counties in Michigan during the 2008 bear hunting season (included only counties with at least 20 hunters). Interference was the proportion of hunters that reported interference from other hunters (all types of hunters).

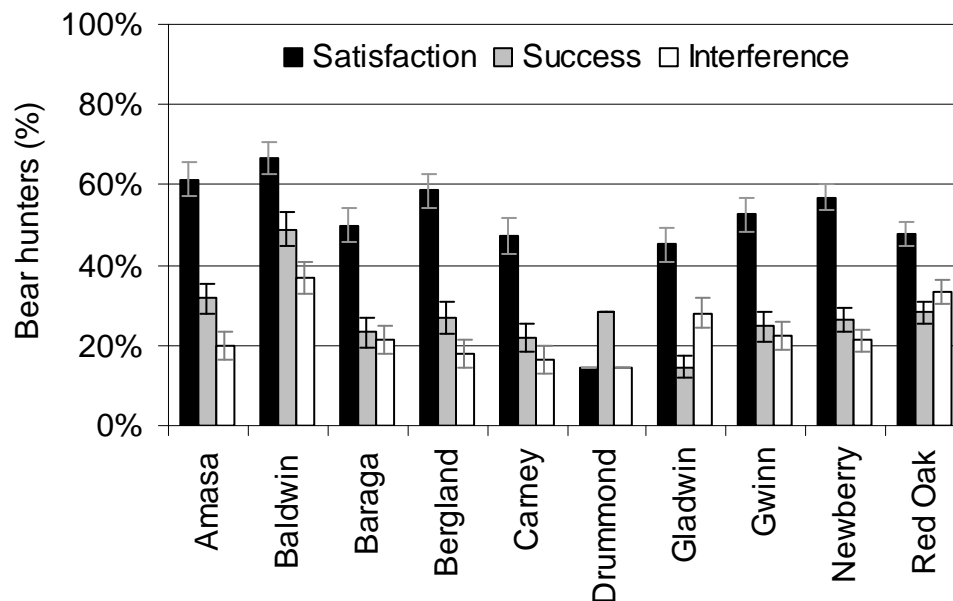
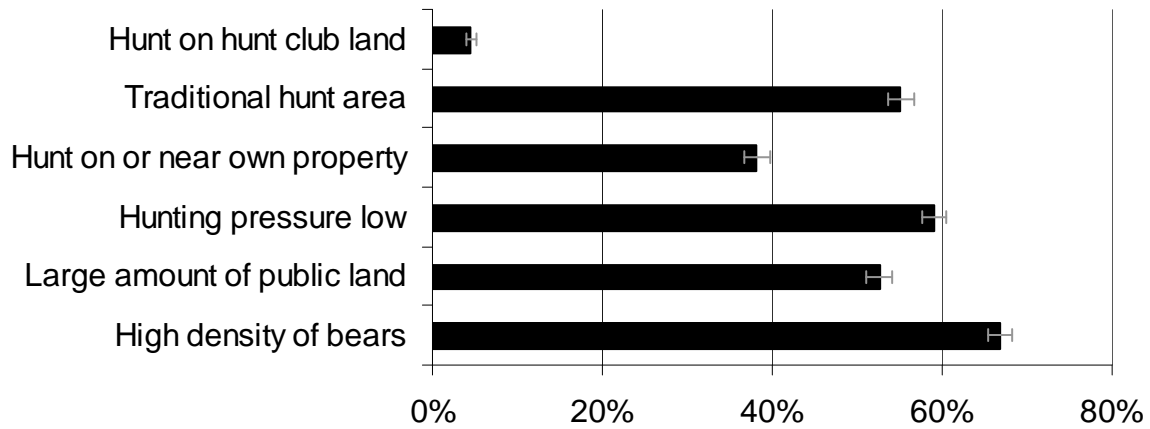


Figure 10. Estimated hunter satisfaction, hunting success, and level of hunter interference in Michigan's management units during the 2008 bear hunting season. Satisfaction measures the proportion of hunters rating their hunting experiences as very good or good. Error bars represent the 95% confidence limit. Interference was the proportion of hunters that reported interference from other hunters (all types of hunters).



Proportion of bear hunters reporting reason as very important or important

Figure 11. Reasons bear hunters cited as important factors in selecting their bear hunting location in Michigan during the 2008 bear hunting season. Error bars represent the 95% confidence limit.

Table 1. Number of people purchasing hunting licenses for the 2008 Michigan bear hunting seasons and number of people selected for survey sample.

Management unit	Licenses available (quota)	Number of eligible applicants ^a	Licenses sold ^b	Number of people included in mail survey sample ^c
Amasa	970	2,524	833	377
Baldwin	65	2,578	63	56
Baraga	2,910	4,313	2,124	521
Bergland	1,955	2,666	1,455	469
Carney	1,115	2,225	847	386
Drummond Island	8	340	8	7
Gladwin	175	763	137	124
Gwinn	1,380	3,200	1,052	419
Newberry	2,415	7,938	1,876	731
Red Oak	2,000	12,045	1,783	707
Statewide	12,993	38,592	10,178	3,797
Applicants opting for Preference Point ^d		16,866		

^aNumber of eligible applicants selecting the management unit as their first choice to hunt.

^bFewer licenses were sold than the number available because some successful applicants failed to purchase a license.

^cAn additional 731 hunters responded on the internet before the mail sample was selected; these internet responders were used in the calculating survey estimates.

^dApplicants that chose to receive a preference point rather than enter into the drawing for a hunting license.

Table 2. Estimated number of hunters, harvest, hunter success, hunting effort, mean days hunted, and mean effort per harvested bear during the 2008 Michigan bear hunting season.

Management Unit	Hunters		Harvest		Hunter success		Hunting effort		Days hunted per hunter (\bar{x})		Days hunted per harvested bear (\bar{x})	
	No.	95% CL ^a	No.	95% CL ^a	%	95% CL ^a	Days	95% CL ^a	Days	95% CL ^a	Days	95% CL ^a
Amasa	804	13	255	30	32	4	6,321	504	7.9	0.6	24.8	5.2
Baldwin	61	1	30	3	49	4	252	14	4.1	0.2	8.5	1.1
Baraga	1,995	43	462	71	23	4	15,391	1,257	7.7	0.6	33.3	7.8
Bergland	1,338	33	360	52	27	4	9,167	737	6.9	0.5	25.5	5.6
Carney	756	22	165	28	22	4	6,275	524	8.3	0.6	38.0	9.6
Drummond Is.	7	0	2	0	29	0	49	0	7.0	0.0	24.5	0.0
Gladwin	134	2	20	4	15	3	558	26	4.1	0.2	28.3	7.1
Gwinn	985	21	243	36	25	4	7,326	513	7.4	0.5	30.1	6.4
Newberry	1,740	31	462	51	27	3	12,003	727	6.9	0.4	26.0	4.4
Red Oak	1,692	25	479	47	28	3	8,175	373	4.8	0.2	17.1	2.3
Statewide ^b	9,512	75	2,476	125	26	1	65,516	1,893	6.9	0.2	26.4	1.9

^a 95% confidence limits.

^b Column totals may not equal statewide totals because of rounding.

Table 3. Estimated number of hunters, harvest, hunter success, hunting effort, hunter satisfaction, and hunt interference during the 2008 Michigan bear hunting season.

County	Hunters ^a		Harvest ^a		Hunter success		Hunting effort (days) ^a		Hunter satisfaction ^b		Interfered hunters ^c	
	Total	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	%	95% CL
Alcona	247	36	87	23	35	8	971	174	54	8	24	7
Alger	250	40	67	21	27	7	1,673	324	48	8	33	8
Alpena	160	30	63	19	39	10	674	166	54	10	27	9
Antrim	36	15	0	0	0	0	172	89	42	20	29	18
Arenac	0	0	0	0		0	0	0		0		0
Baraga	729	82	168	45	23	6	5,035	771	52	7	20	5
Benzie	6	2	2	1	40	14	25	7	40	14	40	14
Charlevoix	44	16	11	9	26	17	162	68	39	19	46	19
Cheboygan	126	28	29	14	23	10	681	181	42	11	32	11
Chippewa	398	48	108	27	27	6	2,647	446	53	7	28	6
Clare	48	5	6	2	13	5	206	27	44	7	34	7
Crawford	63	21	20	12	31	15	277	105	40	16	58	16
Delta	375	45	102	25	27	6	2,974	485	51	7	19	5
Dickinson	295	39	75	21	25	6	2,156	382	52	7	23	6
Emmet	48	18	14	10	29	17	175	82	35	18	35	18
Gladwin	48	5	5	2	10	4	167	24	42	7	29	6
Gogebic	563	59	154	37	27	6	4,201	633	55	7	19	5

^aNumber of hunters does not add up to statewide total because hunters can hunt in more than one county. Column totals for hunting effort and harvest may not equal statewide totals because of rounding errors.

^bProportion of hunters that rated their hunting experience as very good or good.

^cProportion of hunters that indicated that they experienced interference from other hunters (all types of hunters).

Table 3 (continued). Estimated number of hunters, hunting effort, harvest, hunter success, hunter satisfaction, and hunt interference during the 2008 Michigan bear hunting season.

County	Hunters ^a		Harvest ^a		Hunter success		Hunting effort (days) ^a		Hunter satisfaction ^b		Interfered hunters ^c	
	Total	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	%	95% CL
Gd. Traverse	7	5	3	4	39	38	23	8	85	13	31	21
Houghton	367	65	77	30	21	8	3,097	781	50	10	22	8
Iosco	35	14	8	6	22	16	165	75	25	16	32	17
Iron	531	33	174	26	33	5	4,398	498	62	5	23	4
Isabella	1	1	0	0	0	0	9	8	0	0	100	0
Kalkaska	74	21	7	6	9	8	320	121	36	14	49	15
Keweenaw	179	48	57	27	32	13	1,081	485	50	14	18	11
Lake	24	2	14	2	59	6	80	9	72	6	23	6
Leelanau	0	0	0	0	0	0	0	0	0	0	0	0
Luce	484	53	120	29	25	5	3,110	492	57	6	23	5
Mackinac	253	41	46	18	18	7	2,029	455	60	8	19	7
Manistee	3	1	1	1	33	18	19	7	33	18	33	18
Marquette	774	78	198	43	26	5	6,000	919	53	6	18	5
Mason	1	1	1	1	100	0	2	1	100	0	0	0
Mecosta	1	1	0	0	0	0	4	3	100	0	0	0
Menominee	462	35	80	20	17	4	3,904	476	44	6	15	4
Midland	0	0	0	0	0	0	0	0	0	0	0	0

^aNumber of hunters does not add up to statewide total because hunters can hunt in more than one county. Column totals for hunting effort and harvest may not equal statewide totals because of rounding errors.

^bProportion of hunters that rated their hunting experience as very good or good.

^cProportion of hunters that indicated that they experienced interference from other hunters (all types of hunters).

Table 3 (continued). Estimated number of hunters, hunting effort, harvest, hunter success, hunter satisfaction, and hunt interference during the 2008 Michigan bear hunting season.

County	Hunters ^a		Harvest ^a		Hunter success		Hunting effort (days) ^a		Hunter satisfaction ^b		Interfered hunters ^c	
	Total	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	%	95% CL
Missaukee	102	25	23	12	22	10	465	132	33	12	48	12
Montmorency	203	34	58	19	29	8	966	198	51	9	35	8
Muskegon	0	0	0	0	0	0	0	0	0	0	0	0
Newaygo	11	2	3	1	30	9	50	10	39	9	80	8
Oceana	0	0	0	0	0	0	0	0	0	0	0	0
Ogemaw	55	17	8	6	14	11	241	97	51	15	34	15
Ontonagon	712	74	180	41	25	5	4,656	726	56	6	19	5
Osceola	18	3	5	2	29	10	78	16	61	10	27	9
Oscoda	131	28	49	18	37	11	585	162	64	11	35	11
Otsego	84	23	27	13	33	13	472	146	56	14	33	13
Presque Isle	170	31	44	16	26	8	747	166	57	10	20	8
Roscommon	162	30	25	12	15	7	885	203	41	10	44	10
Schoolcraft	338	46	109	28	32	7	2,092	367	56	7	17	6
Wexford	20	7	7	2	33	12	88	51	61	20	22	9
Unreported	1,313	106	241	49	18	3	7,753	892	57	4	21	4

^aNumber of hunters does not add up to statewide total because hunters can hunt in more than one county. Column totals for hunting effort and harvest may not equal statewide totals because of rounding errors.

^bProportion of hunters that rated their hunting experience as very good or good.

^cProportion of hunters that indicated that they experienced interference from other hunters (all types of hunters).

Table 4. Estimated number and proportion of hunters hunting on private and public lands during the 2008 bear hunting season.

Management unit	Land type															
	Private land only				Public land only				Both private and public lands				Unknown land			
	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL
Amasa	310	33	39	4	321	33	40	4	165	27	20	3	8	7	1	1
Baldwin	16	2	27	3	38	2	62	4	6	2	9	3	1	1	2	1
Baraga	643	80	32	4	834	85	42	4	483	73	24	4	35	23	2	1
Bergland	290	48	22	4	773	61	58	4	271	47	20	3	4	6	0	0
Carney	398	35	53	4	182	29	24	4	176	29	23	4	0	0	0	0
Drummond Is.	3	0	43	0	1	0	14	0	3	0	43	0	0	0	0	0
Gladwin	75	6	55	4	45	5	33	4	14	3	10	3	1	1	1	1
Gwinn	351	40	36	4	447	42	45	4	181	32	18	3	6	7	1	1
Newberry	514	53	30	3	885	60	51	3	317	45	18	3	25	14	1	1
Red Oak	865	53	51	3	614	51	36	3	202	34	12	2	11	9	1	1
Statewide	3,465	136	36	1	4,140	144	44	1	1,816	115	19	1	91	31	1	0

Table 5. Estimated number of days of hunting effort on private and public lands during the 2008 Michigan bear hunting season.

Management unit	Land type							
	Private lands		Public lands		Both private and public lands		Unknown	
	Total	95% CL	Total	95% CL	Total	95% CL	Total	95% CL
Amasa	2,240	396	2,520	397	1,522	335	38	44
Baldwin	68	10	159	14	21	9	3	2
Baraga	4,813	803	5,647	963	4,766	1,027	165	130
Bergland	2,122	531	4,697	586	2,302	516	46	77
Carney	3,348	446	1,302	327	1,625	369	0	0
Drummond Is.	14	0	8	0	27	0	0	0
Gladwin	318	30	178	26	61	17	0	0
Gwinn	2,814	457	3,170	407	1,287	299	56	64
Newberry	3,748	503	5,798	595	2,423	507	34	34
Red Oak	4,105	342	2,940	316	1,023	228	107	79
Statewide ^a	23,590	1,365	26,419	1,468	15,057	1,403	450	190

^aColumn totals may not equal statewide totals because of rounding errors.

Table 6. Number of applicants, licenses sold, estimated number of hunters, harvest, hunting effort (days), and hunting success during Michigan bear hunting seasons, 2002-2008.

Region	Year						
	2002	2003	2004	2005	2006	2007	2008
Upper Peninsula							
Applicants	29,112	27,344	28,295	28,600	26,554	24,712	23,206
Licenses sold	7,393	7,453	7,558	7,808	7,786	7,774	8,195
Hunters	6,949	6,939	7,062	7,305	7,310	7,221	7,625
Harvest	1,962	2,026	1,834	1,908	2,176	1,817	1,948
Males (%)	62	62	63	63	63	62	59
Females (%)	37	38	36	36	36	36	40
Unknown (%)	1	1	1	1	1	2	1
Hunter-days	51,452	54,333	52,158	53,729	53,113	55,025	56,531
Hunter success (%)	28	29	26	26	30	25	26
Lower Peninsula							
Applicants	14,370	14,297	15,616	15,625	14,634	14,370	15,386
Licenses sold	1,711	1,761	1,737	1,654	1,670	1,740	1,983
Hunters	1,626	1,695	1,653	1,567	1,608	1,653	1,888
Harvest	320	439	388	303	463	365	528
Males (%)	70	52	61	58	60	56	58
Females (%)	29	47	38	39	38	43	40
Unknown (%)	1	1	1	3	2	1	1
Hunter-days	8,465	8,592	8,451	8,250	7,589	8,838	8,984
Hunter success (%)	20	26	23	19	29	22	28
Statewide							
Applicants ^a	51,686	50,908	54,831	57,040	55,050	54,014	55,458
Licenses sold	9,104	9,214	9,295	9,462	9,456	9,514	10,178
Hunters	8,575	8,634	8,714	8,872	8,918	8,874	9,512
Harvest	2,282	2,465	2,221	2,210	2,639	2,181	2,476
Males (%)	63	60	62	63	63	61	59
Females (%)	36	39	36	36	36	37	40
Unknown (%)	1	1	1	1	1	2	1
Hunter-days	59,917	62,925	60,609	61,979	60,702	63,862	65,516
Hunter success (%)	27	29	25	25	30	25	26

^aNumber of applicants statewide also included people that applied for a preference point.

Table 7. Hunting equipment used to hunt bear in Michigan, 2008.

Equipment	Number of hunters	95% CL ^a	Equipment used (%)
Firearm	7,233	133	<p>A pie chart illustrating the distribution of hunting equipment used by hunters in Michigan in 2008. The chart is divided into four segments: a large black segment for 'Firearm' at 76.0%, a white segment for 'Both' at 12.6%, a gray segment for 'Archery' at 11.1%, and a very small white segment for 'Unknown' at 0.2%.</p>
Archery	1,042	89	
Both firearm and archery	1,218	94	
Unknown	20	14	

^a95% confidence limits.

Table 8. Primary hunting methods used to hunt bear in Michigan, 2008.

Method	Number of hunters	95% CL ^a	Method used (%)
Bait only	8,090	120	<p>A pie chart illustrating the distribution of primary hunting methods used by hunters in Michigan in 2008. The chart is divided into five segments: a large black segment for 'Bait Only' at 85.2%, a gray segment for 'Dogs Only' at 3.2%, a white segment for 'Dogs & Bait' at 7.1%, a small white segment for 'Other' at 3.0%, and a very small white segment for 'Unknown' at 1.6%.</p>
Dogs only	319	50	
Dogs and bait	673	76	
Other	282	47	
Unknown	149	36	

^a95% confidence limits.

Table 9. Hunting methods used to harvest bear in Michigan, 2008.

Method	Number of hunters	95% CL ^a	Method used (%)
Bait only	2,058	117	<p>Bait Only 83.3%</p> <p>Dogs Only 5.1%</p> <p>Dogs & Bait 9.4%</p> <p>Other 1.2%</p> <p>Unknown 1.0%</p>
Dogs only	136	34	
Dogs and bait	230	44	
Other	28	16	
Unknown	24	15	

^a95% confidence limits.

Table 10. Level of hunter success, interference, and satisfaction of bear hunters with their hunting experience in Michigan during the 2008 season.

Management unit	Hunter success (%)	Hunters interfered by other hunters (%) ^a	Hunters interfered by other bear hunters (%)	Satisfaction level (%)					
				Very good	Good	Neutral	Poor	Very poor	No answer
Amasa	32	20	14	26	36	17	12	8	1
Baldwin	49	37	20	32	35	11	9	13	0
Baraga	23	21	17	21	28	24	15	8	3
Bergland	27	18	15	19	39	21	12	7	2
Carney	22	16	11	15	32	23	17	10	2
Drummond Is.	29	14	14	14	0	43	14	29	0
Gladwin	15	28	12	18	27	28	12	13	2
Gwinn	25	22	16	19	33	24	13	8	2
Newberry	27	21	17	21	36	22	13	6	2
Red Oak	28	33	24	21	27	20	19	11	3
Statewide	26	23	17	21	32	22	15	8	2

^aIncludes all types of hunters.

Appendix A

2008 Michigan Bear Harvest Questionnaire



2008 MICHIGAN BEAR HARVEST REPORT

This information is requested under authority of Part 435, 1994 PA 451, M.C.L. 324.43539.



It is important that you complete and return this report even if you did not hunt or harvest a bear. If you want to provide your answers via the internet, visit our website at <https://secure1.state.mi.us/wildlifesurveys/bear.aspx>.

1. Did you hunt bear in Michigan during the 2008 season?

¹ ☐ Yes ² ☐ No; skip to question 11 on the reverse side

2. Please report the number of days for each county that you hunted bear in the following table.

COUNTY HUNTED (List each county that you hunted for bear; for example, Marquette County)	NUMBER OF DAYS HUNTED	TYPE OF LAND
		¹ <input type="checkbox"/> Private ² <input type="checkbox"/> Public ³ <input type="checkbox"/> Both
		¹ <input type="checkbox"/> Private ² <input type="checkbox"/> Public ³ <input type="checkbox"/> Both
		¹ <input type="checkbox"/> Private ² <input type="checkbox"/> Public ³ <input type="checkbox"/> Both
		¹ <input type="checkbox"/> Private ² <input type="checkbox"/> Public ³ <input type="checkbox"/> Both
		¹ <input type="checkbox"/> Private ² <input type="checkbox"/> Public ³ <input type="checkbox"/> Both

3. Did you hunt with a firearm, a bow, or with both during the 2008 bear season?

¹ ☐ Firearm ² ☐ Bow ³ ☐ Both

4. What hunting method did you most often use when hunting bear in Michigan during the 2008 bear season? (*please select only one item*)

¹ ☐ Hunted over bait only ² ☐ Used dogs only (bait not used)
³ ☐ Used dogs started over bait ⁴ ☐ Used other methods not involving dogs or bait

5. Was your harvest tag put on a bear? (*If no, please skip to question 7*)

¹ ☐ Yes ² ☐ No

Please continue on back

6. If your harvest tag was put on a bear, please fill in the information below

- a. What date was the bear harvested?
(please check [X] the box for the date of harvest)

September 2008						
S	M	T	W	T	F	S
			10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

October 2008						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26						

- b. What was the sex of the bear? ¹ ☐ Male ² ☐ Female ³ ☐ Not sure

- c. In what county was it harvested?
(please write in the county name)

- d. On what type of land was the bear harvested? ¹ ☐ Private ² ☐ Public

- e. What type of weapon was used to harvest bear? ¹ ☐ Firearm ² ☐ Bow

- f. What was the method of harvest? ¹ ☐ Taken over bait ² ☐ Used dogs (bait not used)
³ ☐ Used dogs started over bait ⁴ ☐ Used other methods not involving dogs or bait

7. Did other hunters interfere with your bear hunting? ¹ ☐ Yes ² ☐ No (skip to question 9)

8. If you answered "yes" to the previous question, was the interference caused by other bear hunters? ¹ ☐ Yes ² ☐ No

9. Overall, how would you rate your 2008 bear hunting experiences?

- ¹ ☐ Very Good ² ☐ Good ³ ☐ Neutral ⁴ ☐ Poor ⁵ ☐ Very Poor

10. How important were the following factors for selecting the location where you hunted bear in 2008?

	Very Important	Important	Slightly Important	Not Important	Not Sure
A. The area had a high density of bears.	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>	⁴ <input type="checkbox"/>	⁵ <input type="checkbox"/>
B. The area had a large amount of public land or commercial forest.	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>	⁴ <input type="checkbox"/>	⁵ <input type="checkbox"/>
C. Hunting pressure was low.	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>	⁴ <input type="checkbox"/>	⁵ <input type="checkbox"/>
D. I owned the property where I hunted or it was near my property.	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>	⁴ <input type="checkbox"/>	⁵ <input type="checkbox"/>
E. I have traditionally hunted this area.	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>	⁴ <input type="checkbox"/>	⁵ <input type="checkbox"/>
F. I hunted property owned by a hunt club in this area.	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>	⁴ <input type="checkbox"/>	⁵ <input type="checkbox"/>

11. In 2000, a preference point system was implemented for distributing bear hunting licenses in Michigan. Which of the following best describes your opinion about the system? (select one)

- ¹ ☐ Strongly Approve ² ☐ Approve ³ ☐ Not Sure ⁴ ☐ Disapprove ⁵ ☐ Strongly Disapprove

Return the completed report in the enclosed postage-paid envelope. Thanks for your help.